

03/31/00

Jc-780 U.S. PTO

4-3-00

A

Please type a plus sign (+) inside this box → ☐

Approved for use through 09/30/2000. OMB 0651-0032  
 Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

<b>UTILITY PATENT APPLICATION TRANSMITTAL</b>	Attorney Docket No. <b>AMC1151-002D</b>
	First Inventor or Application Identifier <b>Joseph</b>
	Title <b>SYSTEM FOR EVALUATING TREATMENT OF CHEST PAIN PATIENTS</b>
Express Mail Label No. <b>EL039916005US</b>	

\*Only for new nonprovisional applications under 37 C.F.R. § 1.53(b).

<b>APPLICATION ELEMENTS</b> See MPEP chapter 600 concerning utility patent application contents.	<b>ADDRESS TO:</b> Assistant Commissioner for Patents Box Patent Application Washington, DC 20231
1. <input checked="" type="checkbox"/> Fee Transmittal Form (e.g., PTO/SB/17) (Submit an original and a duplicate for fee processing)	5. <input type="checkbox"/> Microfiche Computer Program (Appendix)
2. <input checked="" type="checkbox"/> Specification [Total Pages <b>13</b> ] (preferred arrangement set forth below)	6. Nucleotide and/or Amino Acid Sequence Submission (if applicable, all necessary)
- Descriptive title of the Invention - Cross References to Related Applications - Statement Regarding Fed sponsored R & D - Reference to Microfiche Appendix - Background of the Invention - Brief Summary of the Invention - Brief Description of the Drawings (if filed) - Detailed Description - Claim(s) - Abstract of the Disclosure	a. <input type="checkbox"/> Computer Readable Copy b. <input type="checkbox"/> Paper Copy (identical to computer copy) c. <input type="checkbox"/> Statement verifying identity of above copies
3. <input checked="" type="checkbox"/> Drawing(s) (35 U.S.C. 113) [Total Sheets <b>41</b> ]	<b>ACCOMPANYING APPLICATION PARTS</b>
4. Oath or Declaration [Total Pages <b>2</b> ]	7. <input type="checkbox"/> Assignment Papers (cover sheet & document(s)) 8. <input type="checkbox"/> 37 C.F.R. § 3.73(b) Statement of Power of Attorney 9. <input type="checkbox"/> English Translation Document (if applicable) 10. <input checked="" type="checkbox"/> Information Disclosure Statement (IDS)/PTO-1449 <input type="checkbox"/> Copies of IDS Citations 11. <input type="checkbox"/> Preliminary Amendment 12. <input checked="" type="checkbox"/> Return Receipt Postcard (MPEP 503) (Should be specifically itemized) 13. <input checked="" type="checkbox"/> Small Entity Statement(s) <input checked="" type="checkbox"/> Statement filed in prior application, Status still proper and desired (PTO/SB/09-12) 14. <input type="checkbox"/> Certified Copy of Priority Document(s) (if foreign priority is claimed) 15. <input type="checkbox"/> Other:
*NOTE FOR ITEMS 13, 14 IN ORDER TO BE ENTITLED TO PAY SMALL ENTITY FEES, A SMALL ENTITY STATEMENT IS REQUIRED (37 C.F.R. § 1.27), EXCEPT IF ONE FILED IN A PRIOR APPLICATION IS RELIED UPON (37 C.F.R. § 1.28)	

16. If a CONTINUING APPLICATION, check appropriate box, and supply the requisite information below and in a preliminary amendment:

☒ Continuation ☐ Divisional ☐ Continuation-in-part (CIP) of prior application No. **08 874,060**  
 Prior application information: Examiner **R. Carter** Group/Art Unit **3736**

For CONTINUATION or DIVISIONAL APPS only: The entire disclosure of the prior application, from which an oath or declaration is supplied under Box 4b, is considered a part of the disclosure of the accompanying continuation or divisional application and is hereby incorporated by reference. The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.

## 17. CORRESPONDENCE ADDRESS

☐ Customer Number or Bar Code Label or ☒ Correspondence address below  
 Insert Customer No. or Attach bar code label here:

Name	Jeffrey S. Standley			
Address	495 Metro Place South Suite 210			
City	Dublin	State	Ohio	Zip Code 43017
Country	USA	Telephone	614-792-5555	Fax 614-792-5536

Name (Print/type)	JEFFREY S. STANDLEY	Registration No. (Attorney/Agent)	34,021
Signature	<i>Jeffrey S. Standley</i>	Date	3-31-00

Burden Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Box Patent Application, Washington, DC 20231

09540139-033100

 Jc-678 U.S. PTO  
 09/540139  
 03/31/00

Applicant: Dr. Anthony Joseph  
Attorney's Docket No.: 1151-002  
Serial No.: 08/563,642  
Filed: November 28, 1995  
For: SYSTEM FOR EVALUATING TREATMENT OF CHEST PAIN PATIENTS

VERIFIED STATEMENT (DECLARATION) CLAIMING SMALL ENTITY  
STATUS (37 CFR 1.27(A)) - INDIVIDUAL

As a below named inventor, I hereby declare that I qualify as an independent inventor as defined in 37 CFR 1.9(c) for purposes of paying reduced fees under section 41(a) and (b) of Title 35, United States Code, to the Patent and Trademark Office with regard to the invention entitled SYSTEM FOR EVALUATING TREATMENT OF CHEST PAIN PATIENTS by inventor, Dr. Anthony Joseph, described in:

☐ the specification filed herewith.  
☒ application Serial No. 08/563,642 filed November 28, 1995.

I have not assigned, granted, conveyed or licensed and am under no obligation under contract or law to assign, grant, convey or license, any rights in the invention to any person who could not be classified as an independent inventor under 37 CFR 1.9(c) if that person had made the invention, or to any concern which would not qualify as a small business concern under 37 CFR 1.9(d) or a nonprofit organization under 37 CFR 1.9(e).

Each person, concern or organization to which I have assigned, granted, conveyed, or licensed or am under an obligation under contract or law to assign, grant, convey, or license any rights in the invention is listed below:

\*NOTE: Separate verified statements are required from each named person, concern or organization having rights to the invention averring to their status as small entities. (37 CFR 1.27)

NAME \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
☐ INDIVIDUAL ☐ SMALL BUSINESS CONCERN ☐ NONPROFIT ORGANIZATION

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate (37 CFR 1.28(b)).

09540139-033100

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

NAME OF PERSON SIGNING Dr. Anthony Joseph

ADDRESS OF PERSON SIGNING 5442 Riverside Drive, Dublin, Ohio 43017

SIGNATURE Anthony J. Joseph M.D.

DATE 3-5-96

CERTIFICATE OF MAILING BY FIRST CLASS MAIL  
I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to Commissioner of Patents and Trademarks, Washington, D.C. 20231 on

March 8, 1996  
Date of Deposit

Lori A. Kessen

Typed or printed name of person depositing this mailing

Lori A. Kessen  
Signature

EXPRESS MAIL NO.: EL039916005US

DATE OF DEPOSIT: MARCH 31, 2000

APPLICATION FOR UNITED STATES LETTERS PATENT  
FOR  
SYSTEM FOR EVALUATING TREATMENT  
OF CHEST PAIN PATIENTS

00110137 031010

Inventor: Dr. Anthony Joseph

Attorneys: Standley & Gilcrest LLP  
Attn.: Jeffrey S. Standley  
495 Metro Place South  
Suite 210  
Dublin, Ohio 43017  
Phone: (614) 792-5555

**SYSTEM FOR EVALUATING TREATMENT  
OF CHEST PAIN PATIENTS**

Inventor: Dr. Anthony Joseph

This application is a continuation of U.S. Patent Application Serial No. 08/874,060 filed on June 12, 1997, which was a file wrapper continuation of U.S. Patent Application Serial No. 08/563,642 filed on November 28, 1995, both of which are incorporated herein by reference.

**BACKGROUND OF THE INVENTION**

This invention relates generally to a data processing system and method for evaluating medical treatment. More particularly it relates to a data processing system and method for evaluating treatment of chest pain patients.

Coronary heart disease is the number one killer of Americans. It accounts for nearly twenty percent of the national health care budget. The chief complaint of between five and eight percent of the patients seen in emergency departments in 1994 was chest pain. However, only a small percentage of patients experiencing chest pain have acute myocardial infarction (AMI) or a significant risk of AMI.

Traditionally, most patients who complained of chest pain were admitted to hospitals for evaluation until a determination could be made concerning whether the patient had AMI or was at significant risk of AMI. Inpatient evaluation of chest pain is very expensive. In response to the high cost of inpatient evaluation, many hospitals have developed alternatives to inpatient evaluation.

The Emergency Chest Pain Unit was originally designed as a way to prevent primary ventricular fibrillation. It usually falls within the province of the Emergency

Department. Today, it is charged with responsibility for early recognition and treatment of patients with AMI. Another alternative is the Observation Unit. It is distinct from the Emergency Chest Pain Unit. The primary function of the Observation Unit is the early diagnosis and risk stratification of patients with underlying occult coronary artery disease.

- 5 The use of alternatives such as these reduces the cost of treating chest pain, while allowing the proper diagnosis and treatment to occur. Hospitals need a way to evaluate the performance of these alternatives to inpatient care and to compare the performance of inpatient treatment with emergency department treatment and treatment in an observation unit.

- 10 Rapid identification and treatment of patients with AMI is critical to their survival. Early intervention dramatically improves outcomes no matter what reperfusion strategy is used.

The standardization of the evaluation and treatment of patients complaining of chest pain is an important part of improving care. The National Heart Attack Alert

- 15 Program Committee, the American Heart Association, and the American College of Cardiology have made specific recommendations that result in improved outcomes. For example, a goal of thirty minutes from entry into the emergency department to treatment with thrombolytic therapy has been established by the National Heart Attack Alert Program Committee. In order to evaluate the effectiveness of these recommendations, it  
20 is important to be able to document and measure the performance of the recommendation accurately. Currently, there is no way to measure this performance objectively.

Since rapid diagnosis and treatment of AMI are critical to patient survival, hospitals must be able to evaluate the performance of medical care providers objectively.

Adherence to treatment protocols is an important factor in this evaluation. However, there is no objective way to measure adherence currently.

In addition, failure to diagnose heart attack is the number one malpractice problem in Emergency Medicine today, accounting for almost twenty percent of all malpractice dollars paid out. Emergency chest pain evaluation is a high volume, high risk arena. An organized system-wide approach to the diagnosis of heart attack can be viewed as a risk management tool.

Therefore, it would be desirable to have a way to evaluate objectively the performance of treatment protocols and the adherence of medical care providers to the treatment protocols in the treatment of chest pain.

#### BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a flow chart for part of a data verification procedure relating to patient arrival to ensure the validity of the patient treatment information.

Fig. 2 is a flow chart for part of a data verification procedure relating to patient symptoms to ensure the validity of the patient treatment information.

Fig. 3 is a flow chart for part of a data verification procedure relating to the date and timing of testing to ensure the validity of the patient treatment information.

Fig. 3A is a flow chart for part of a data verification procedure relating to the date and timing of testing to ensure the validity of the patient treatment information.

Fig. 4 is a flow chart for part of a data verification procedure relating to the date and timing of testing to ensure the validity of the patient treatment information.

Fig. 5 is a flow chart for part of a data verification procedure relating to the timing and type of treatment to ensure the validity of the patient treatment information.

Fig. 6 is a flow chart for part of a data verification procedure relating to the time of disposition from the emergency department to ensure the validity of the patient treatment information.

Fig. 7A is a flow chart for part of a data verification procedure relating to the final emergency department diagnosis to ensure the validity of the patient treatment information.

Fig. 7B is a flow chart for part of a data verification procedure relating to the final emergency department diagnosis to ensure the validity of the patient treatment information.

Fig. 8A is a flow chart for part of a data verification procedure relating to the final hospital discharge diagnosis to ensure the validity of the patient treatment information.

Fig. 8B is a flow chart for part of a data verification procedure relating to the final hospital discharge diagnosis to ensure the validity of the patient treatment information.

Fig. 8C is a flow chart for part of a data verification procedure relating to the final hospital discharge diagnosis to ensure the validity of the patient treatment information.

Fig. 9A is a flow chart for part of a data verification procedure relating to the patient's primary care physician to ensure the validity of the patient treatment information.

Fig. 9B is a flow chart for part of a data verification procedure relating to the patient's cardiologist to ensure the validity of the patient treatment information.



Fig. 9C is a flow chart for part of a data verification procedure relating to when the patient did not have a physician to ensure the validity of the patient treatment information.

Fig. 10A is a flow chart for part of a data verification procedure relating to treatment given to the patient to ensure the validity of the patient treatment information.

Fig. 10B is a flow chart for part of a data verification procedure relating to treatment given to the patient to ensure the validity of the patient treatment information.

Fig. 10C is a flow chart for part of a data verification procedure relating to treatment given to the patient to ensure the validity of the patient treatment information.

Fig. 10D is a flow chart for part of a data verification procedure relating to treatment given to the patient to ensure the validity of the patient treatment information.

Fig. 11A is a flow chart for part of a data verification procedure relating to treatment given to the patient to ensure the validity of the patient treatment information.

Fig. 11B is a flow chart for part of a data verification procedure relating to treatment given to the patient to ensure the validity of the patient treatment information.

Fig. 11C is a flow chart for part of a data verification procedure relating to treatment given to the patient to ensure the validity of the patient treatment information.

Fig. 11D is a flow chart for part of a data verification procedure relating to treatment given to the patient to ensure the validity of the patient treatment information.

Fig. 11E is a flow chart for part of a data verification procedure relating to treatment given to the patient to ensure the validity of the patient treatment information.

Fig. 12A is a flow chart for part of a data verification procedure relating to treatment given to the patient to ensure the validity of the patient treatment information.

Fig. 12B is a flow chart for part of a data verification procedure relating to treatment given to the patient to ensure the validity of the patient treatment information.

Fig. 12C is a flow chart for part of a data verification procedure relating to treatment given to the patient to ensure the validity of the patient treatment information.

5 Fig. 12D is a flow chart for part of a data verification procedure relating to treatment given to the patient to ensure the validity of the patient treatment information.

Fig. 12E is a flow chart for part of a data verification procedure relating to treatment given to the patient to ensure the validity of the patient treatment information.

10 Fig. 13 is part of a flow chart for a preferred format for the relational database for the patient treatment information.

Fig. 14 is part of a flow chart for a preferred format for the relational database for the patient treatment information.

Fig. 15 is part of a flow chart for a preferred format for the relational database for the patient treatment information.

15 Fig. 16 is part of a flow chart for a preferred format for the relational database for the patient treatment information.

Figs. 17A - M show typical user data entry formats of one preferred embodiment of the system of the present invention.

## DESCRIPTION OF THE INVENTION

00540139-033100  
DATED: 02-10-2006

The present invention is a data processing system for evaluating treatment of chest pain patients in a medical facility. The system comprises means for entering patient treatment information, means for storing the patient treatment information, means for retrieving the patient treatment information, means for comparing the patient treatment information to predetermined values, and means for reporting the comparison of the patient treatment information to the predetermined values, so that the medical facility is able to improve its treatment of chest pain patients. In addition, the system comprises means for identifying the need to provide additional training for a medical care giver or a medical facility, and means for allocating staff resources in a medical facility.

A data processing method for evaluating treatment of chest pain patients in a medical facility is also disclosed. The method comprises entering patient treatment information, storing the patient treatment information, retrieving the patient treatment information, comparing the patient treatment information to predetermined values, and reporting the comparison of the patient treatment information to the predetermined values so that the medical facility is able to improve its treatment of chest pain patients. The reported comparisons can be used to evaluate a treatment protocol, a medical care provider, or a medical facility. They can also be used to identify the need to provide additional training for a medical care provider, or a medical facility. In addition, they can be used to allocate staff resources in a medical facility.

The data processing system for evaluating treatment of chest pain patients in a medical facility of the present invention can comprise a single personal computer, a

network of personal computers connected together, or a central computer connected to a network of data entry terminals.

Information concerning patient treatment is entered into the system. Information can be entered using a keyboard or a non-keyboard method of data entry. The patient treatment information is stored in a relational database. The system processes the information as requested and compares it to predetermined values. The system prepares a report of the comparison of the patient treatment information with the predetermined values. The system uses this reported comparison to evaluate treatment protocols, individual performance of medical care providers, and overall performance of the medical facility.

The database can be created using any commercial database program, such as ACCESS® by Microsoft. Figs. 1 to 12 describe a data verification procedure to ensure the validity of the patient treatment information which is to be entered. Figs. 13 to 16 describe a preferred format for a relational database for the patient treatment information. Figs. 17A to 17M show typical user data entry formats of one preferred embodiment of the system of the present invention.

Patient treatment information includes data concerning the particular patient, such as name, age, doctor, cardiologist, symptoms, and time of onset of symptoms. It can also include information concerning the testing and treatment received by the patient, such as whether and when an electrocardiogram (EKG) was done, whether and when other tests used to identify AMI were done, and when certain treatment was initiated and completed.

The patient treatment information is compared to certain predetermined values. The predetermined values could be care standards set by a medical group, or they could be values which are based on past experience, such as an average of prior data points.

- 5 The standardization of the parameters to be measured allows evaluation of the effectiveness of treatment protocols. It also allows evaluation of the adherence to those protocols of medical care providers, individually and collectively, at a single facility, a group of facilities, regionally, and nationally.

- 10 The system and method can evaluate whether a particular patient's treatment fell within recommended guidelines. They can also evaluate the performance of a particular emergency department doctor or nurse over time to determine, for example, whether he/she is meeting recommended guidelines for obtaining an initial EKG, whether other tests for AMI are being performed in a timely fashion, or whether appropriate treatment is being given based upon the test results. They can also evaluate whether a medical facility, such as an observation unit, is meeting these guidelines.

- 15 In addition, the system and method can be used to identify whether a particular medical care provider or medical facility is failing to meet guidelines, and therefore needs additional training in treating chest pain patients.

The method can also be used to predict future staffing needs more accurately using documented past experience.

- 20 The system and method can be used to evaluate medical care providers including, but not limited to, particular doctors, nurses, or technicians. The types of medical facilities which can be evaluated include, but are not limited to, a hospital, a specific

department within a hospital, a group of hospitals, or some other type of medical facility such as an outpatient clinic.

5 The system and method can be used to evaluate the performance of payors. With the widespread acceptance of managed care organizations, management of the interface between the payor and the medical care provider has been crucial. In some instances, in order for the medical care provider to meet appropriate benchmarks, the payor must also meet timely deadlines. This system and method can be used to determine if payors are meeting their performance standards.

10 The system and method can also be used to reduce the cost delivering care. The system links clinical care to the financial cost of care. By having accurate information on patient testing, appropriate testing and the timing of testing can be managed. The result is better care at lower cost.

What is claimed is:

1. A data processing system for evaluating treatment of patients in a medical facility,  
the system comprising:

means for entering patient treatment information for a plurality of patients;

5 means for storing the patient treatment information for said plurality of patients;

means for comparing the patient treatment information collectively for said  
plurality of patients to predetermined values, to evaluate the treatment received by said  
plurality of patients; and

10 means for reporting the comparison of the patient treatment information for said  
plurality of patients to the predetermined values to evaluate the treatment received by said  
plurality of patients, so that the medical facility is able to improve its treatment of future  
patients.

2. The data processing system of Claim 1, further comprising means responsive to  
the reported comparisons for identifying the need to provide additional training for a  
15 medical care provider.

3. The data processing system of Claim 1, further comprising means responsive to  
the reported comparisons for identifying the need to provide additional training for the  
medical facility.

4. The data processing system of Claim 1, further comprising means responsive to  
20 the reported comparisons for allocating staff resources in the medical facility.

5. A data processing method for evaluating treatment of patients in a medical  
facility, the method comprising:

entering patient treatment information for a plurality of patients;

storing the patient treatment information for said plurality of patients;

comparing the patient treatment information collectively for said plurality of patients to predetermined values to evaluate the treatment received by said plurality of patients; and

5 reporting the comparison of the patient treatment information for said plurality of patients to the predetermined values, to evaluate the treatment received by said plurality of patients so that the medical facility is able to improve its treatment of future patients.

6. The data processing method of Claim 5, further comprising evaluating the performance of a treatment protocol using the reported comparisons.

10 7. The data processing method of Claim 5, further comprising evaluating the performance of a medical care provider using the reported comparisons.

8. The data processing method of Claim 5, further comprising identifying the need to provide additional training for a medical care provider using the reported comparisons.

15 9. The data processing method of Claim 5, further comprising evaluating the performance of the medical facility using the reported comparisons.

10. The data processing method of Claim 5, further comprising identifying the need to provide additional training for the medical facility using the reported comparisons.

11. The data processing method of Claim 5, further comprising allocating staff resources in the medical facility using the reported comparisons.



### ABSTRACT

A data processing system and method for evaluating the treatment of chest pain patients in a medical facility is disclosed. The system comprises means for entering patient treatment information, means for storing the patient treatment information, means for retrieving the patient treatment information, means for comparing the patient treatment information to predetermined values, and means for reporting the comparison of the patient treatment information to the predetermined values, so that the medical facility is able to improve its treatment of chest pain patients.

# MODE OF ARRIVAL

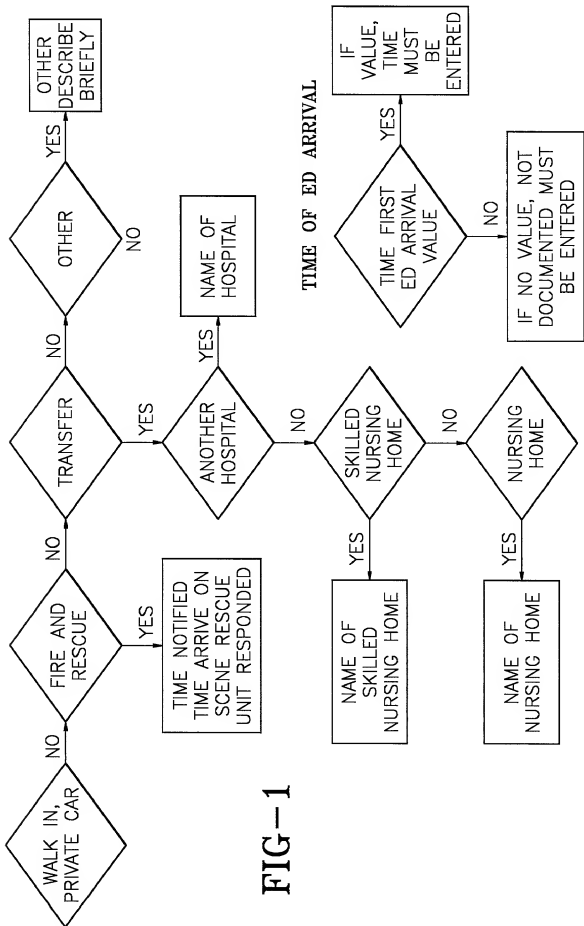
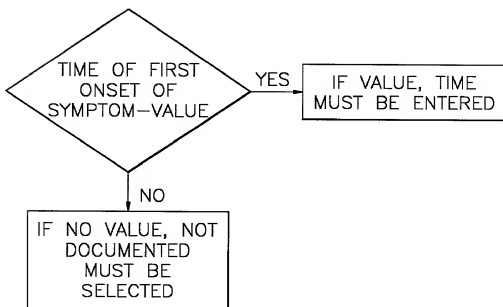


FIG-1

PATIENT SYMPTOMS

TIME OF FIRST ONSET



DATE OF FIRST ONSET

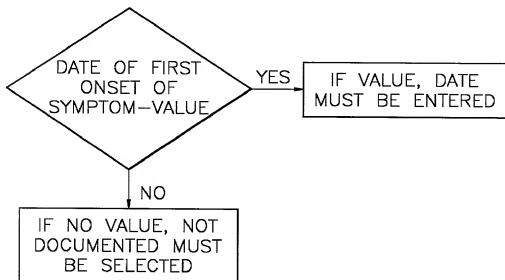


FIG-2

00120-6104560

## TIME STAMP AND THE PATIENT CARE PROCESS

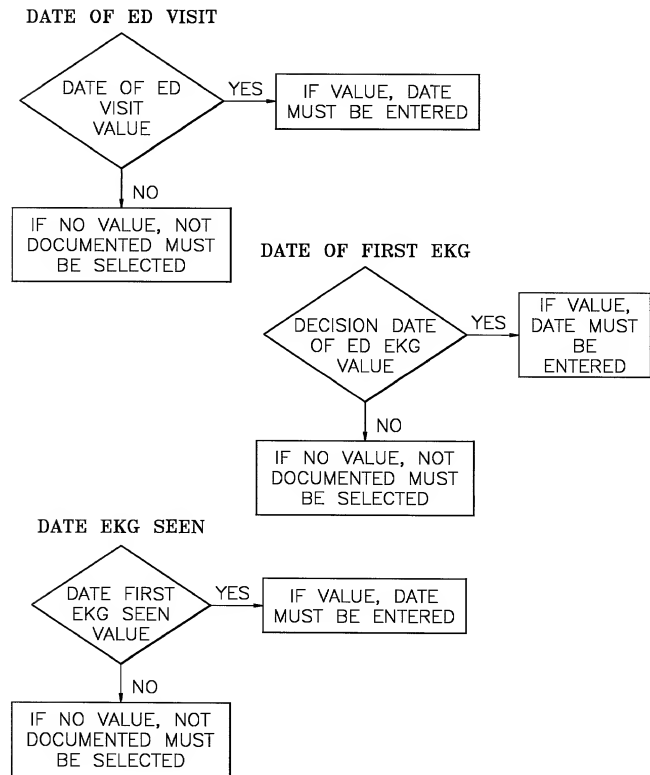
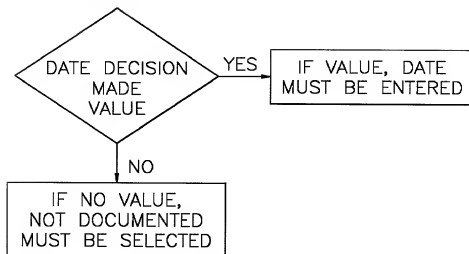
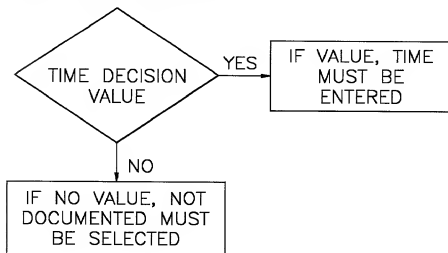
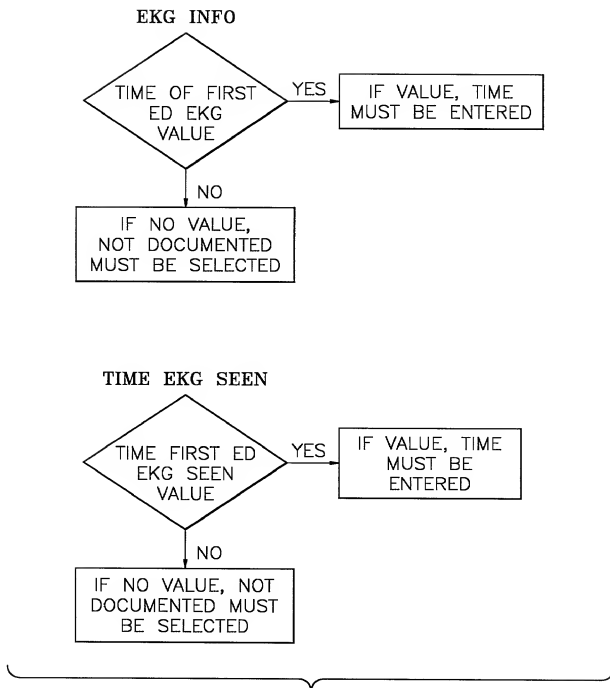


FIG-3

**DATE EKG DECISION****TIME EKG DECISION****FIG-3A**



**FIG-3B**

## DIAGNOSTIC ACUTE ISCHEMIA/INFARCTION

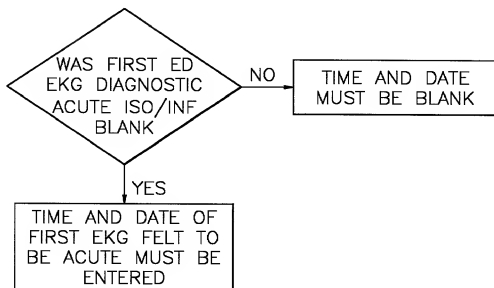


FIG-4

# REPERFUSION STRATEGY

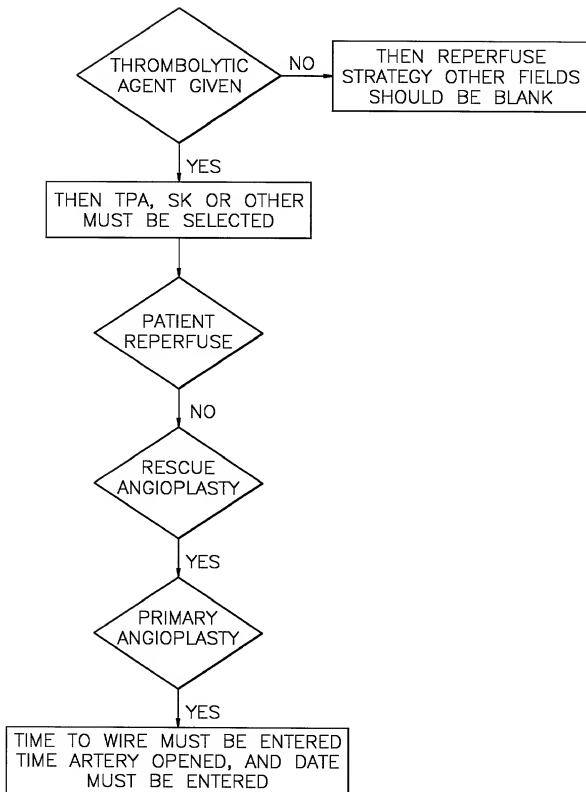


FIG-5



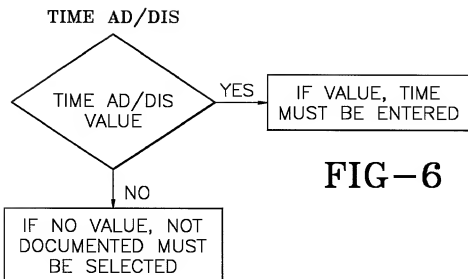
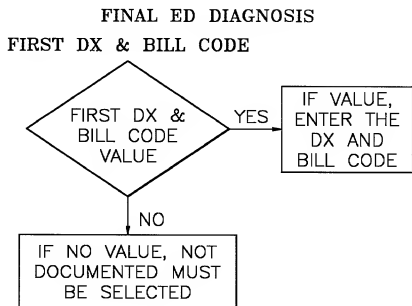


FIG-6

FIG-7A



FINAL ED DIAGNOSIS  
SECOND DX & BILL CODE

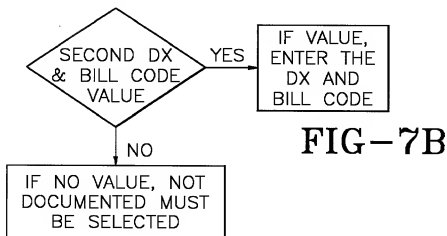


FIG-7B

PATIENT DISPOSITION FROM EMERGENCY

FINAL HOSPITAL DIAGNOSIS

FIRST DX & DRG

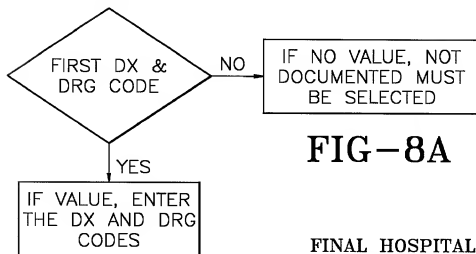


FIG-8A

FINAL HOSPITAL DIAGNOSIS

SECOND DX & DRG

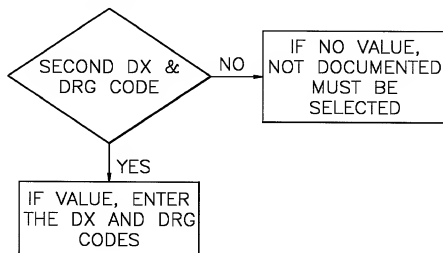


FIG-8B

FINAL HOSPITAL DIAGNOSIS

THIRD DX & DRG

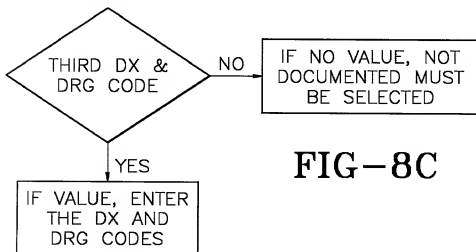
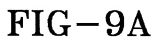


FIG-8C

## 0540390330



**FIG-9A**

# CARDIOLOGIST

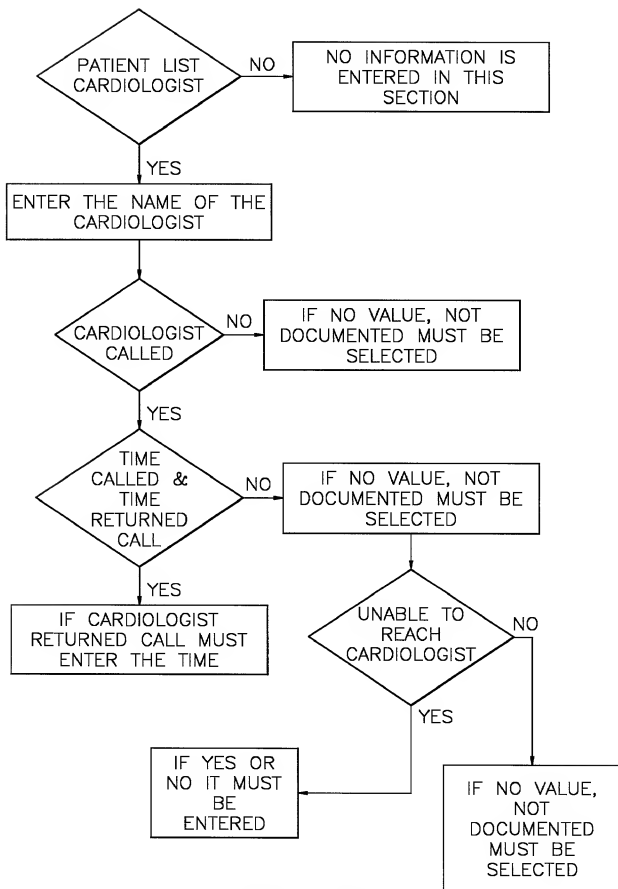


FIG-9B

00120\*66104560

NO PHYSICIAN LISTED

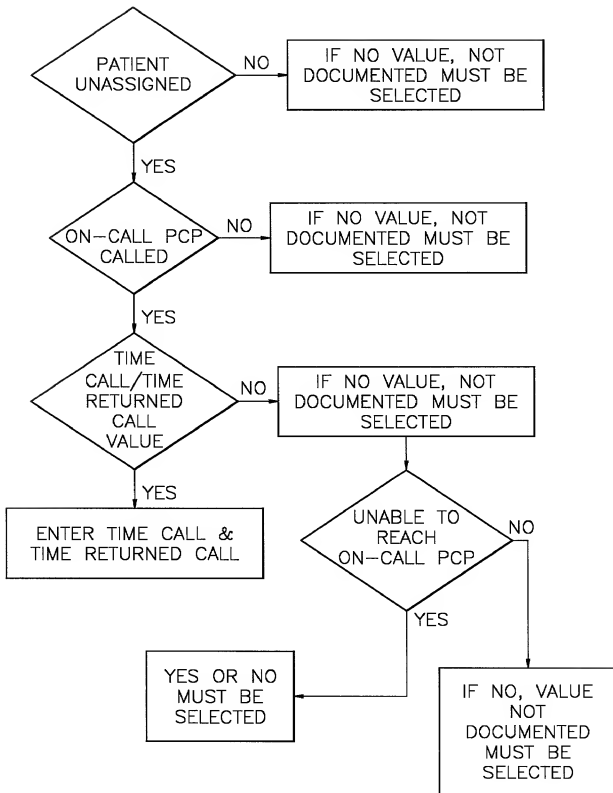


FIG-9C

## CARDIO BIOMAKERS

### MYOGLOBIN TESTING

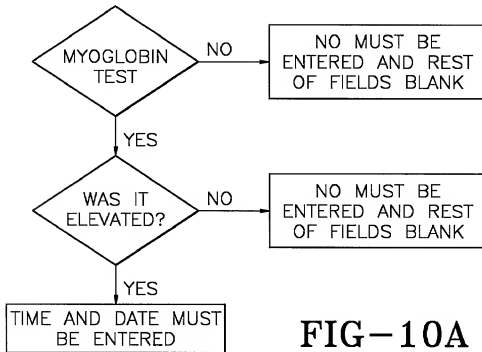


FIG-10A

### CREATINE MB(CK-MB) TEST

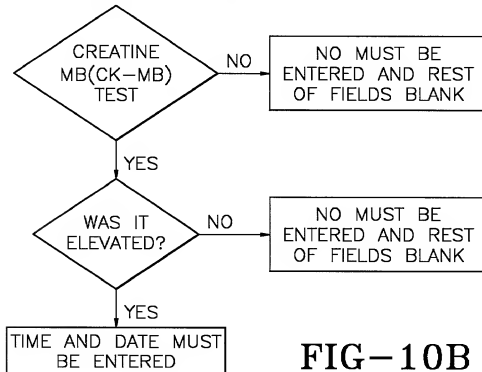


FIG-10B

## CARDIO BIOMAKERS

### CREATINE (CPK OR CK)

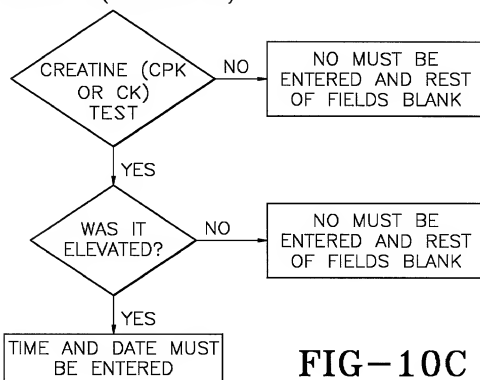


FIG-10C

### TROPONIN TESTING

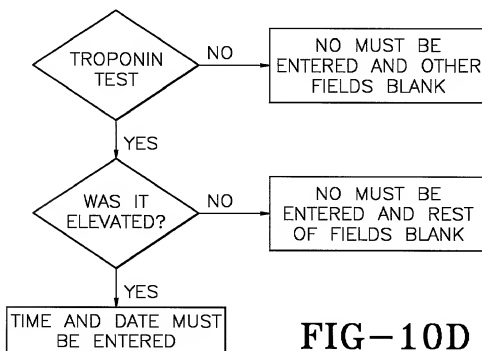


FIG-10D

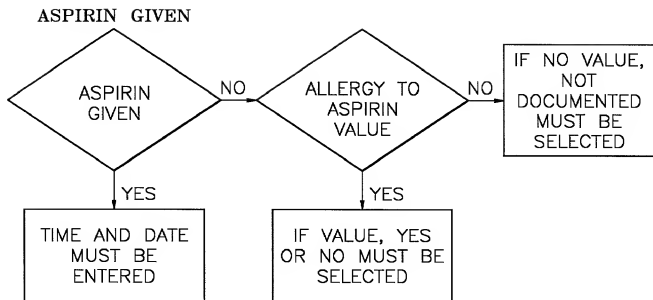


FIG-11A

FIG-11B



BETA BLOCKER GIVEN

09540335-0310

```

graph TD
    A{STRESS TEST GIVEN VALUE} -- YES --> B[ ]
    A -- NO --> C[IF NO VALUE, NOT DOCUMENTED MUST BE SELECTED]
    style B fill:none,stroke:none

```

IF NO VALUE, NOT  
DOCUMENTED MUST BE  
SELECTED

```
graph LR; A{NON IMAGED TEST VALUE} -- NORMAL --> B[NORMAL MUST BE SELECTED]; A -- ABNORMAL --> C[ ];
```

NORMAL MUST BE  
SELECTED

ABNORMAL MUST BE  
SELECTED

FIG-12A

```

graph LR
    A{NUCLEAR  
IMAGED  
STRESS GIVEN  
VALUE} -- NORMAL --> B[NORMAL MUST BE  
SELECTED]
    A -- ABNORMAL --> C[ABNORMAL MUST BE  
SELECTED]
  
```

**FIG-12B**

NORMAL MUST BE  
SELECTED

ABNORMAL MUST BE  
SELECTED

FIG-12B

09540139 "032300  
007630 06101560

### STRESS ECHO TEST

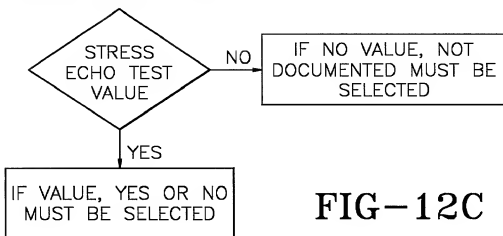


FIG-12C

### HEART CATH



FIG-12D

### TRANSFER FOR HEART CATH

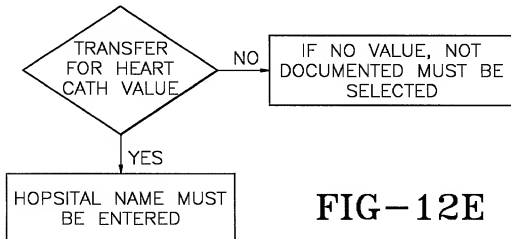
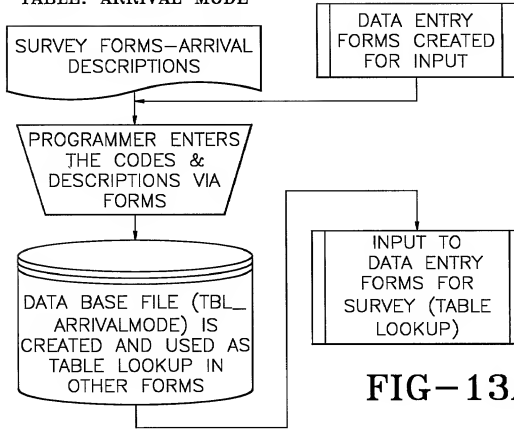


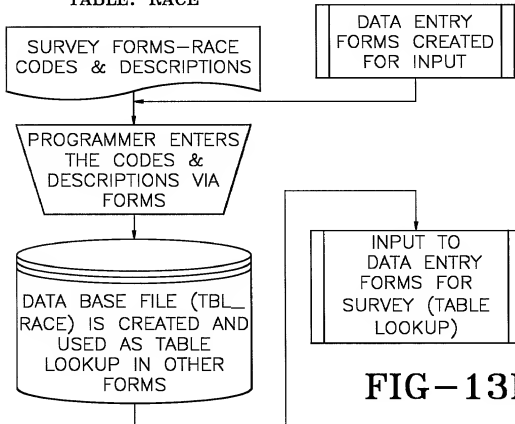
FIG-12E

**TABLE: ARRIVAL MODE**



**FIG-13A**

**TABLE: RACE**



**FIG-13B**

# TABLE: GENDER

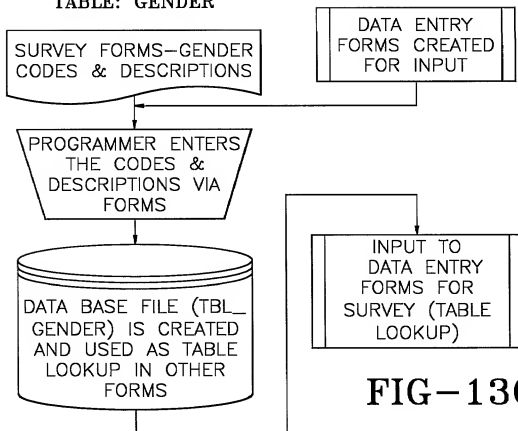


FIG-13C

# TABLE: NITRATES

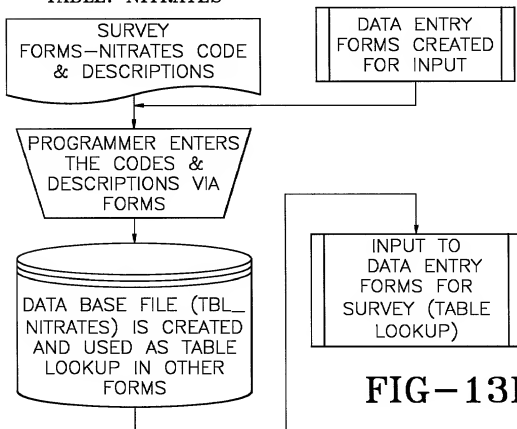
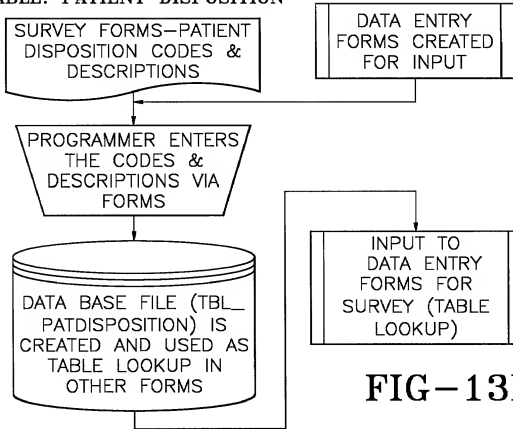


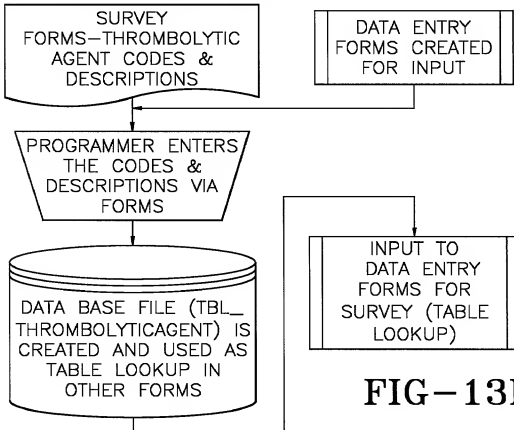
FIG-13D

**TABLE: PATIENT DISPOSITION**



**FIG-13E**

**TABLE: THROMBOLYTIC AGENT**



**FIG-13F**

# TABLE: HEPARIN

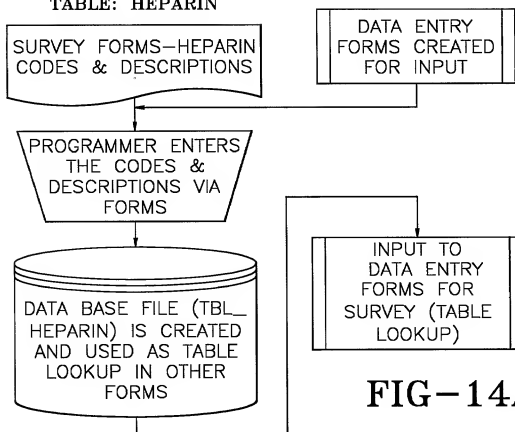


FIG-14A

# TABLE: BETA BLOCKER

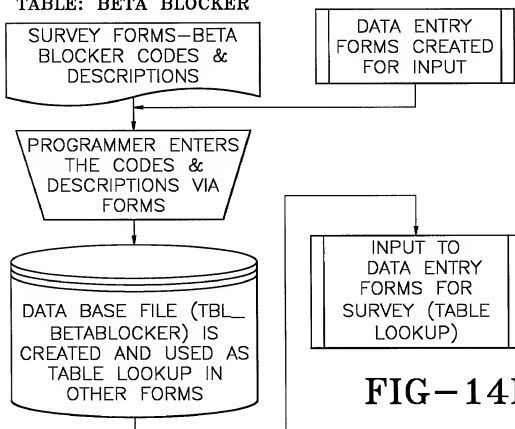


FIG-14B

TABLE: CALCIUM CHANNEL BLOCKER

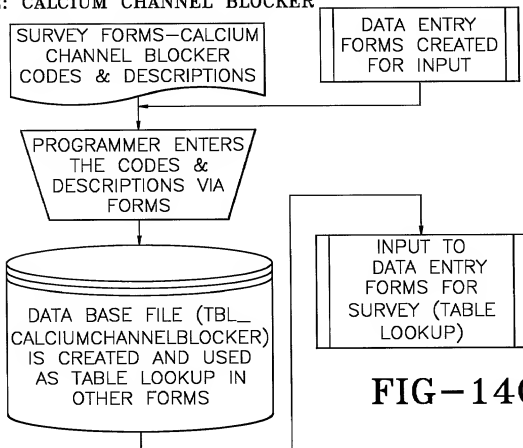


FIG-14C

TABLE: OTHER TESTING

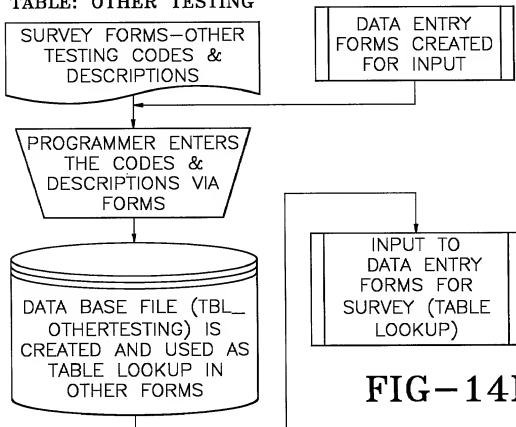
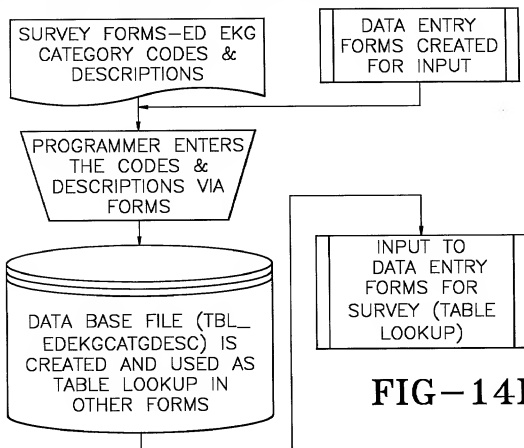


FIG-14D

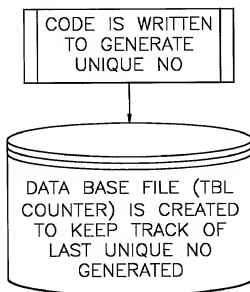


TABLE: ED EKG CATEGORY DESCRIPTIONS



FIG—14E

TABLE: COUNTER



FIG—14F

# MODE OF ARRIVAL & PATIENT SYMPTOMS

## PATIENT INFORMATION

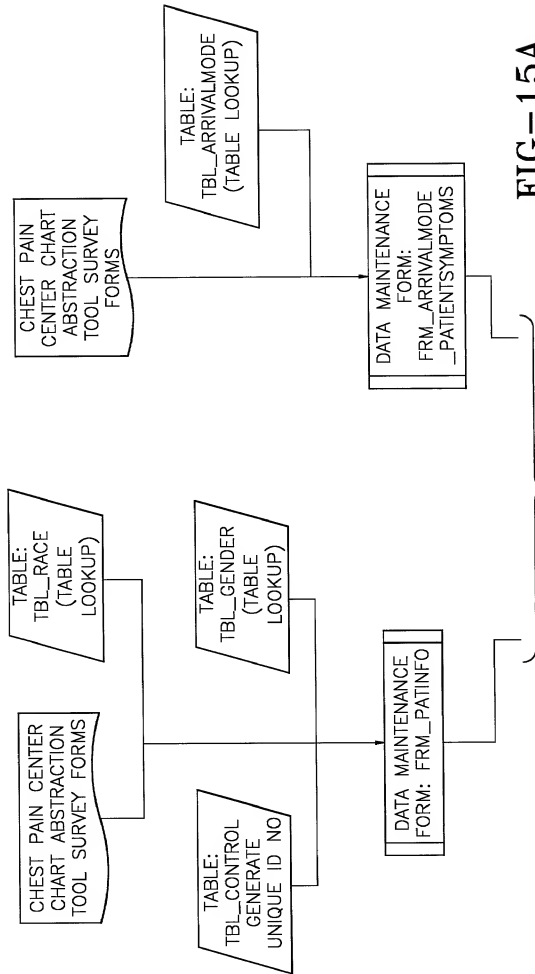


FIG-15A



# OTHER TREATMENTS NITRATES

TABLE:  
TBL\_NITRATES  
(TABLE  
LOOKUP)

CHEST PAIN CENTER  
CHART ABSTRACTION  
TOOL SURVEY FORMS

# OTHER TESTING STRESS

CHEST PAIN  
CENTER CHART  
ABSTRACTION  
TOOL SURVEY  
FORMS

TABLE:  
TBL\_OTHERTESTING  
(TABLE LOOKUP)

DATA MAINTENANCE  
FORM: FRM\_OTASPIRIN  
HEPARINNITRATES

DATA MAINTENANCE  
FORM:  
FRM\_SUBOTHERTEST

FIG-16A

TO FIG-16B

FROM FIG-16A

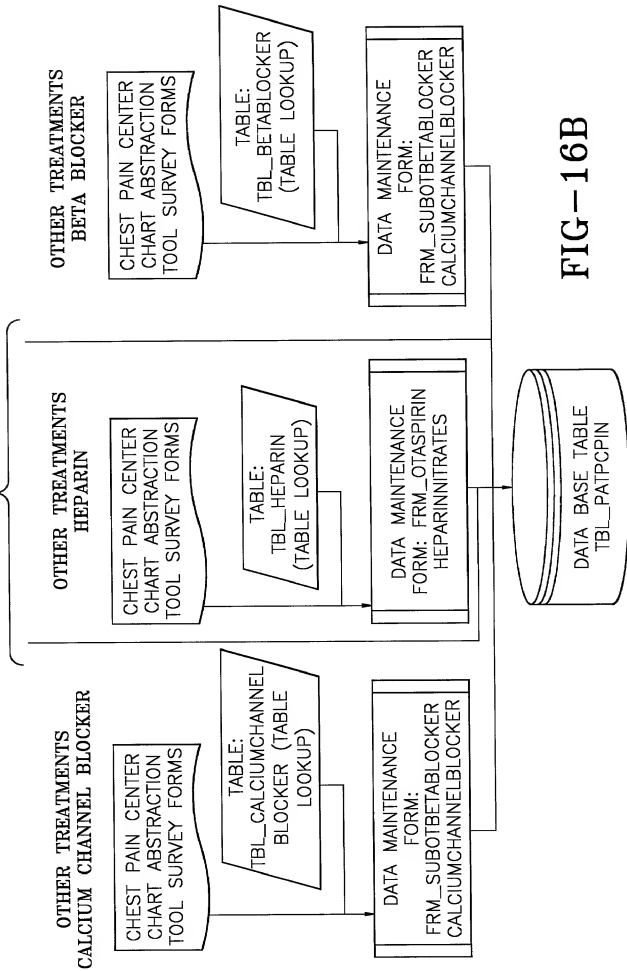


FIG-16B

Chest Pain Center Chart Abstraction Tool Data Forms			
Patient Information			
Hospital Name	Jackson Memorial Hospital	Patient Name	CARYC Hospital No. 1234567890
Mode of Arrival/Patient Symptoms	Cardiac Biomarkers (thru CK-MB)		
Time Stamp and the Patient Care Process	Cardiac Biomarkers (Troponin)		
Reperfusion Strategy	Other Treatments (thru Nitrates)		
Patient Disposition from ED	Other Treatments (Blockers)		
PCP Cardiologist	Other Testing		
No Physician Listed	Financial Information Top Ten Payors		
Close Form			

FIG-17A

Chest Pain Center Chart Abstraction Tool – Quality Assurance									
Patient Information									
Hospital Name:		Jackson Memorial Hospital							
Patient Name:		CARYC	Birth Date:	7/8/65	Gender:	F			
Unique Hospital Number:		1234567890	Race:	H					
Next	Previous	First	Last	Find	Save	Add	Undo	Delete	
Enter/Edit Survey		System Maintenance			Exit Application				

FIG-17B

Patient Information			
Hospital Name	Jackson Memorial Hospital	Patient Name	CARYC
		Hospital No.	1234567890
Mode of Arrival			
Mode of Arrival:	OTHER	Time of Fire & Rescue Arrival:	
		Time of Fire & Rescue Notification:	
Which Fire & Rescue Unit Responded:			
Transfer Facility Name:			
Other Transfer Description:	KKKKK		
Patient Symptoms			
Chest Pain:	<input type="checkbox"/>	Chest Discomfort:	<input checked="" type="checkbox"/>
		Angina:	<input checked="" type="checkbox"/>
Chest Hurts:	<input checked="" type="checkbox"/>	I'm having heart attack	<input checked="" type="checkbox"/>
		Neck pain:	<input checked="" type="checkbox"/>
Arm/shoulder pain:	<input checked="" type="checkbox"/>	Short of breath	<input checked="" type="checkbox"/>
		Abdominal pain:	<input checked="" type="checkbox"/>
Other:	<input checked="" type="checkbox"/>	Other Symptom Description:	TEST
Time of first onset of significant symptoms:	12:00	Not Documented:	<input type="checkbox"/>
Date of first onset of significant symptoms (if different from ED arrival date):	11/11/95		
Time Stamp and the Patient Care Process			
Close Form		Time Stamp and the Patient Care Process	

FIG-17C



Patient Information			
Hospital Name <div style="border: 1px solid black; padding: 2px;">Jackson Memorial Hospital</div>	Patient Name <div style="border: 1px solid black; padding: 2px;">CARYC</div>	Hospital No. <div style="border: 1px solid black; padding: 2px;">1234567890</div>	
Time Stamp and the Patient Care Process			
Date ED Visit: <div style="border: 1px solid black; padding: 2px;">11/11/95</div>		Not Documented: <input type="checkbox"/>	
Time of Arrival at ED: <div style="border: 1px solid black; padding: 2px;"></div>		Not Documented: <input checked="" type="checkbox"/>	
Time of first ED EKG: <div style="border: 1px solid black; padding: 2px;"></div>		Not Documented: <input checked="" type="checkbox"/>	
Date first ED EKG (if different from arrival date): <div style="border: 1px solid black; padding: 2px;">11/11/95</div>		Not Documented: <input checked="" type="checkbox"/>	
Time the first EKG seen by ED doctor: <div style="border: 1px solid black; padding: 2px;"></div>		Not Documented: <input checked="" type="checkbox"/>	
Date first ED EKG seen by ED doctor (if different from arrival date): <div style="border: 1px solid black; padding: 2px;">11/11/95</div>		Not Documented: <input checked="" type="checkbox"/>	
Time doctor makes decision to use thrombolytic or direct angioplasty: <div style="border: 1px solid black; padding: 2px;"></div> Not Documented: <input checked="" type="checkbox"/>			
Date doctor makes decision (if different from arrival date): <div style="border: 1px solid black; padding: 2px;">11/11/95</div>			
What was the first ED EKG (as read by the ED physician)? <div style="border: 1px solid black; padding: 2px;">DIAGNOSTIC ACUTE ISCHEMIA/INFR</div>			
Did the ED physician document his/her EKG interpretation? <div style="display: inline-block; margin-right: 20px;"><input checked="" type="checkbox"/> Yes</div> <div style="display: inline-block;"><input type="checkbox"/> No</div>			
Did the ED physician sign his/her EKG interpretation? <div style="display: inline-block; margin-right: 20px;"><input checked="" type="checkbox"/> Yes</div> <div style="display: inline-block;"><input type="checkbox"/> No</div>			
What was the first ED EKG (as read by the official reader)? <div style="border: 1px solid black; padding: 2px;">ABNORMAL NONDIAGNOSTIC ACUTE</div>			
Time of first EKG felt to be diagnostic for acute ischemia/infarction: <div style="border: 1px solid black; padding: 2px;"></div>			
Date of first diagnostic EKG (if different from arrival date): <div style="border: 1px solid black; padding: 2px;"></div>			
How did the official reader interpret this EKG? <div style="border: 1px solid black; padding: 2px;">ABNORMAL NONDIAGNOSTIC ACUTE</div>			
<div style="border: 1px solid black; padding: 2px 10px;">Close Form</div>		<div style="border: 1px solid black; padding: 2px 10px;">Reperfusion Strategy</div>	

FIG-17D

Patient Information			
Hospital Name	Jackson Memorial Hospital	Patient Name	CARYC
		Hospital No.	1234567890
Reperfusion Strategy			
Thrombolytic agent given? <span style="float: right;">_____</span> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Thrombolytic Agent Type? <span style="float: right;">_____</span> _____	
Did patient reperfuse? <span style="float: right;">_____</span> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Time Thrombolytic agent initiated: <span style="float: right;">_____</span> _____	
Primary angioplasty? <span style="float: right;">_____</span> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Date (if different from arrival date): <span style="float: right;">_____</span> _____	
Time to wire: <span style="float: right;">_____</span>		Did patient undergo rescue angioplasty? <span style="float: right;">_____</span> _____	
Date (if different from arrival date): <span style="float: right;">_____</span>		Time artery opened: <span style="float: right;">_____</span>	
Close Form		Patient Disposition from ED	

**FIG-17E**

# OFFICE

Patient Information	
Hospital Name <input type="text" value="Jackson Memorial Hospital"/>	Patient Name <input type="text" value="CARYC"/> Hospital No. <input type="text" value="1234567890"/>
Patient Disposition from Emergency Department	
Patient Disposition from Emergency Department: <input type="text" value="TRANSFER HOSPITAL"/>	
If admitted to hospital, what unit did the patient get admitted to: <input type="text"/>	
If transferred to another hospital, which hospital: <input type="text" value="Kujihkjhk"/>	
Time ED physician made decision to admit or transfer: <input type="text"/>	
Date (if different from arrival date): <input type="text" value="11/11/95"/>	Time patient actually left ED: <input type="text" value="15:45"/>
Date (if different from arrival date): <input type="text" value="11/11/95"/>	
Final ED Diagnosis (2) (from ED record)	
First Dx: <input type="text"/>	Billing Code: <input type="text"/> Not Documented: <input type="checkbox"/>
Second Dx: <input type="text"/>	Billing Code: <input type="text" value="tttt"/> Not Documented: <input type="checkbox"/>
Final Hospital Discharge Diagnosis (3) (from hospital chart if patient was admitted)	
First Dx: <input type="text"/>	DRG Code <input type="text" value="tttt"/> Not Documented: <input type="checkbox"/>
Second Dx: <input type="text" value="gggg"/>	DRG Code <input type="text"/> Not Documented: <input type="checkbox"/>
Third Dx: <input type="text"/>	DRG Code <input type="text" value="gggg"/> Not Documented: <input type="checkbox"/>
Close Form	
PCP Cardiologist	
Caregiver Information	
Name of Emergency Physician caring for patient: <input type="text"/>	
Name of Emergency Nurse caring for patient: <input type="text"/>	

FIG-17F

Patient Information			
Hospital Name	Jackson Memorial Hospital	Patient Name	CARYC Hospital No. 1234567890
Primary Care Physician			
<p>Did patient list a primary care physician? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>If yes, name: <input type="text"/></p> <p>Was the primary care physician called? <input type="checkbox"/> Yes <input type="checkbox"/> No Not Documented: <input type="checkbox"/> Yes <input type="checkbox"/> No Not Documented: <input type="checkbox"/> Yes <input type="checkbox"/> No Not Documented: <input type="checkbox"/> Yes <input type="checkbox"/> No Not Documented: <input type="checkbox"/></p> <p>If yes, time PCP was called: <input type="text"/></p> <p>If yes, time PCP returned the call: <input type="text"/></p> <p>If yes, unable to reach the PCP: <input type="text"/></p>			
Cardiologist			
<p>Did patient list a cardiologist? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>If yes, name: <input type="text"/></p> <p>Was a Cardiologist called? <input type="checkbox"/> Yes <input type="checkbox"/> No Not Documented: <input type="checkbox"/> Yes <input type="checkbox"/> No Not Documented: <input type="checkbox"/> Yes <input type="checkbox"/> No Not Documented: <input type="checkbox"/></p> <p>If yes, time Cardiologist was called: <input type="text"/></p> <p>If yes, time Cardiologist returned the call: <input type="text"/></p> <p>If yes, unable to reach the Cardiologist: <input type="text"/></p>			
Close Form		No Physician Listed	

FIG-17G

Patient Information			
Hospital Name	Jackson Memorial Hospital	Patient Name	CARYC Hospital No. 1234567890
No Physician Listed			
Was patient "unassigned" (did not have a physician)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
If yes, was the "on call" PCP called? <input type="checkbox"/> Not Documented: <input type="checkbox"/> If yes, time "on call" PCP was called: <input type="checkbox"/> Not Documented: <input type="checkbox"/> If yes, time "on call" PCP returned the call: <input type="checkbox"/> Not Documented: <input type="checkbox"/> If yes, unable to reach the "on call" PCP: <input type="text"/>			
Close Form		Cardiac Biomarkers (thru CK-MB)	

FIG-17H

## Cardiac Biomarkers

Was myoglobin testing done? ☐ Yes ☒ No

Was it elevated? ☐

If elevated, what was time of first abnormal test:  
Date (if different from arrival date):

Was creatine kinase (CPK or CK) testing done? ☐ Yes ☒ No

Was it elevated? ☐

If elevated, what was time of first abnormal test:  
Date (if different from arrival date):

Was creatine kinase MB(CK-MB) testing done? ☐ Yes ☒ No

Was it elevated? ☐

If elevated, what was time of first abnormal test:  
Date (if different from arrival date):

FIG-17I

Cardiac Biomarkers	
<p>Was Troponin testing done? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>	<p>Was it elevated? <input type="checkbox"/></p>
<p>If elevated, what was time of first abnormal test: Date (if different from arrival date):</p>	<div><input type="text"/></div> <div><input type="text"/></div>
<p>Was only a single CPK, CK or CK-MB done? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>	<p>Was it elevated? <input type="checkbox"/></p>
<p>Was a 0-6-12 hour protocol followed?</p>	<div><input type="text"/></div> <div><input type="text"/></div>
<p>Was a 0-8-16 hour protocol followed?</p>	<div><input type="text"/></div> <div><input type="text"/></div>

FIG-17J

## Other Treatments

Aspirin given?

☐ Yes☒ No

If yes, time first aspirin given:

Date (if different from arrival date):

If no, allergy to aspirin listed:

Heparin given?

☐ Yes☒ No

If yes, route:

Time first heparin given:

Date (if different from arrival date):

If no, allergy to heparin listed:

Nitrates given?

☐ Yes☒ No

If yes, route:

Name of agent used:

Time first nitrate given:

Date (if different from arrival date):

FIG-17K



Other Treatments

Beta Blocker given?

☐ Yes

☒ No

If yes, route:

Name of agent used:

Time first Beta Blocker given:

Date (if different from arrival date):

If no, allergy to Beta Blocker listed:

Calcium Channel

Blocker given?

☐ Yes

☒ No

If yes, route:

Name of agent used:

Time first calcium channel blocker given:

Date (if different from arrival date):

If no, allergy to calcium channel blocker listed:

FIG-17L

Financial Information Top Ten Payors	
Payor1:	
Payor2:	
Payor3:	
Payor4:	
Payor5:	
Payor6:	
Payor7:	
Payor8:	
Payor9:	
Payor10:	
OtherPayor:	

Close Form

FIG-17M

**DECLARATION**  
**AND**  
**POWER OF ATTORNEY**

As the below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor of the subject matter which is claimed and for which a patent is sought on the invention entitled SYSTEM FOR EVALUATING TREATMENT OF CHEST PAIN PATIENTS the specification of which

(check one)            ☐ is attached hereto.

☒ was filed on November 28, 1995 as  
Application Serial No. 08/563,642  
and was amended on \_\_\_\_\_ (if applicable)

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the patentability of the invention claimed in this application, in accordance with Title 37, Code of Federal Regulations, §1.56(a) and (b).

I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s)

			<u>Priority Claimed</u>	
_____ (Number)	_____ (Country)	_____ (Day/Month/Year Filed)	<input type="checkbox"/> Yes	<input type="checkbox"/> No
_____ (Number)	_____ (Country)	_____ (Day/Month/Year Filed)	<input type="checkbox"/> Yes	<input type="checkbox"/> No
_____ (Number)	_____ (Country)	_____ (Day/Month/Year Filed)	<input type="checkbox"/> Yes	<input type="checkbox"/> No

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, §112, we acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulation, §1.56(a) and (b) which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

(Application Serial No.)	(Filing Date)	(Status) (patented, pending abandoned)
(Application Serial No.)	(Filing Date)	(Status) (patented, pending abandoned)

I hereby appoint Roger A. Gilcrest, Reg. No. 31,954, Jeffrey S. Standley, Reg. No. 34,021 and/or Patricia L. Prior, Reg. No. 33,758, c/o Standley & Gilcrest, 555 Metro Place North, Suite 500, Dublin, Ohio 43017, Telephone No. (614) 792-5555 my attorneys, with full power in each of them, of substitution and revocation, to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith. All correspondence should be sent to the attention of Jeffrey S. Standley at the address above.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application of any patent issued thereon.

Full name of inventor Anthony Joseph M.D.  
Dr. Anthony Joseph

Date 3-5-96

Residence Dublin, Ohio

Citizenship United States of America

Post Office Address 5442 Riverside Drive, Dublin, Ohio 43017

CERTIFICATE OF MAILING BY FIRST CLASS MAIL

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to Commissioner of Patents and Trademarks, Washington, D.C. 20231 on

March 8, 1996

Date of Deposit

Lori A. Kessen

Typed or printed name of person depositing this mailing

Lori A. Kessen

09540136-033100